RK GRIFFITH
& Associates

"Power Plant Accessories"

July 18, 2006

Via email doer.rps@state.ma.us

Robert Sydney, Esq.
General Counsel
Massachusetts Division of Energy Resources
100 Cambridge Street
Suite 1020
Boston, MA 02114

Re: Massachusetts RPS Comments

Dear Mr. Sydney:

Robert K. Griffith & Associates is a manufacturer's representative of several companies with an interest in promoting the expansion and betterment of the renewable energy program that the Commonwealth is sponsoring. As such we have a vested interest in the success of the RPS and perhaps some small expertise in the area as well. Please consider

1. The proposed standard removes the language prohibiting stoker technology for new and vintage plants. This is a major improvement to the standard. Stoker technology has improved over the years like the automobile engine has improved. Stoker plants can operate as efficiently and cleanly as their fluid bed counterparts, and are typically more reliable and less costly to build and operate.

In the Annual RPS Compliance Report for 2004 that was recently released, less than 2/3 of the required 1.5% of retail load sold from renewable sources was actually met from eligible plants. This shortage of eligible plants is causing the cost of Massachusetts RPS Renewable Energy Credits (RECs) to be artificially high with limited ability to increase the supply. Including stoker fired biomass plants can improve the supply of eligible credits in two ways:

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The limited amount of existing biomass plants that can benefit from the vintage waiver can make modifications and increase the supply of eligible supply in a relatively short time frame. This would have a relatively quick reduction in the cost of Massachusetts RECs without flooding the market.

New biomass plants will now have the option to build stoker technology plants. The lower plant cost and higher reliability will provide long term relief to the high REC prices.

2. On page 5 of the guidelines, it states that "Over time, the emission limits of Table One will be lowered. The guideline does not specifically state that once a plant is deemed eligible under the appropriate guideline that is the guideline in effect for the life of that plant.

We recommend that the guideline have language similar to that in the revised standard in section 14.05(1) (a) (6) (b) stating that a plant must meet "the Guidelines that are applicable for the date on which the Division receives the Unit's Statement of Qualification application".

3. On page 13 of the guidelines, it states that "DOER will use the target values in Table Three below to evaluate the plant's net heat rate at a standard fuel moisture specification of 45%". We would hope that you would see that there are many benefits to a wood fired plant which are still are valid if the plant is slightly less efficient than other generation sources. Heat rate in a biomass plant changes by the minute based on moisture content, and is very difficult to determine. A more meaningful measure would be to have emission standard on a lbs/net mwh basis which incorporates the emissions and the plant efficiency in one step and is measurable.

Due to high moisture content in the fuel, small plant size, and high parasitic load, biomass plants have not been and may never be as efficient as many other forms of power generation, but that is not their strongpoint. It makes sense to allow only the more efficient biomass plants, but if a heat rate target is used, it should be attainable. Plants should also have to demonstrate a qualifying heat rate by testing albeit difficult. Calculated values vary significantly from actual operation, and plant heat rates degrade with time.

Table Three indicates that in all cases, the stoker plant must be significantly more efficient than a fluidized bed plant. We are not aware of any existing stoker plant that can meet the target heat rate. A heat rate requirement of 14,000 btu/net kwh would allow only the most efficient biomass plants to comply. If DOER truly wants to encourage more efficient biomass plants, why is one technology allowed to be less efficient than another (stoker vs. fluid bed)? The plant efficiencies of stoker plants vs. fluidized bed plants are comparable. Stoker boilers have slightly lower boiler efficiencies due to higher carbon carryover, but fluidized bed units compensate for this by having higher parasitic power requirements.

There are limited technical changes you can make to improve the efficiency of a biomass plant. The economies of scale are not there with small plants to allow ultra high pressure systems with many stages of feedwater heating like in a large central station. One way to improve the efficiency of biomass power plants, is to dry the fuel using energy from the flue gas. The requirement on page 13 that the target be adjusted to 45% moisture fuel prohibits this, unless it is clarified that the 45% level is the moisture content when the fuel arrives on site, not as it enters the boiler.

> We recommend that if there must be a heat rate target for biomass plants equal to or greater than 25 mw net output, it should be 14,000 btu/net kwh as demonstrated by an annual compliance test. A preferable alternative would be to have a NOx limit of 0.91 #/net mwh and a particulate limit of 0.168 #/net mwh.

Again, our position is that there should be no heat rate targets at least not ones that don't reflect industry history, standard or something reasonably achievable. We would be happy to work with the Commonwealth on more reasonable targets or language that allows for the most efficient plants to survive in an open market.

Sincerely,
Robert K. Griffith & Associates, Inc.

Louis E. Griffith
President